6 SEMEN ANALYSIS

6.1 Liquid Samples (Including Oral Rinses and Condoms Containing a Liquid Sample)

6.1.1 Centrifuge and/or allow cellular debris to settle to the bottom of the container.

6.1.2 Transfer a portion of the sediment to an appropriately labeled microscope slide and preserve the remainder of the sediment on multiple swabs as appropriate. Discard the supernatant.

NOTE: When a condom is submitted, and if appropriate to the case scenario, in addition to removing apparent liquid or dried semen from the inner surface, remove possible secretions present on the outer surface with a swab(s) moistened with distilled water and label appropriately. This sample may contain vaginal fluid and may be suitable for DNA PCR-based typing. Air dry and package samples obtained from the inner and outer surfaces separately.

6.2 Dried Stains/Swabs/Smears

6.2.1 Working with only one item at a time to avoid sample mix-up and/or contamination, examine the item for stains. In addition to locating stains visually, an alternate light source (ALS) such as an ultra-violet (UV) light may be useful. Describe the item and the appearance, size, and location of the stains. Diagrams and/or photographs may be helpful.

6.2.2 Test stains and/or swabs, as appropriate, for the possible presence of seminal fluid using the acid phosphatase test, and record and report results.

NOTE: Alternatively, smears correspondingly labeled to PERK swabs may be microscopically examined first. If no spermatozoa are observed on the smears, test the correspondingly labeled swabs for acid phosphatase activity. If spermatozoa are observed on the smears, acid phosphatase testing of the correspondingly labeled swabs is optional unless no DNA typing results are obtained from the swabs. Refer to 6.2.7.4.

6.2.2.1 If the “stained” swabs are submitted with corresponding “control” swabs, the “control” swabs will not be examined.

6.2.2.2 If tests on an item of evidence indicate the presence of seminal fluid, as a general rule a substrate control (an unstained area adjacent to the stain) will not be tested.

6.2.3 Examine smears correspondingly labeled to PERK swabs. If appropriate, based on the acid phosphatase test results, extract stains/swabs for the presence of spermatozoa. Transfer a portion of the extract to an appropriately labeled microscope slide and examine the slide microscopically. The presence of spermatozoa is microscopically confirmed by the presence of identifiable heads and/or by the presence of intact spermatozoa.

6.2.3.1 If no spermatozoa are identified, record and report results. If the acid phosphatase test exhibits a result indicative of the presence of seminal fluid, proceed to paragraph 6.2.4.

6.2.3.2 If no spermatozoa are identified and results obtained for the acid phosphatase test are not indicative of the presence of seminal fluid, no further testing will be conducted. Record and report results.

6.2.3.3 If no spermatozoa are identified in an extract of a stain and a portion of the stain remains, the microscope slide of the negative extract does not need to be retained.

6.2.3.4 If spermatozoa are identified, record and report results. Return the microscope slide with the evidence.

6.2.4 Test stains/swabs for the presence of human prostate-specific antigen (p30) and record and report results.

6.2.5 If appropriate, examine stain(s)/swabs for possible mixtures of physiological fluids (blood, urine and/or feces) and record and report results.

6.2.6 Assess and document the suitability of stains/stained areas/swabs for DNA PCR-based typing.

6.2.7 As appropriate, conduct DNA PCR-based typing.

6.2.7.1 Conduct DNA PCR-based typing, record results, and report results and conclusions after comparing the profile(s) obtained to the appropriate known sample profiles. If a suspect is eliminated, but a probative foreign profile is identified, conduct a DNA Data Bank search for a “match” to the foreign profile, and report the results of the search.

6.2.7.2 Conduct DNA PCR-based typing in the absence of a suspect (no suspect case), record results, conduct a DNA Data Bank search for a “match” to a profile believed to be that of the putative perpetrator, and report the results of the search.

6.2.7.3 When a case has a listed suspect but no known has been submitted, conduct DNA PCR-based typing, record results, and conduct a DNA Data Bank search on any suitable DNA profiles that are believed to be from the putative perpetrator. Report results in the absence of all appropriate known samples and request the submission of appropriate known samples.

6.2.7.4 If no DNA typing results are obtained on swabs with correspondingly labeled smears when the smears were positive for spermatozoa and a DNA typing result was expected, but no acid phosphatase testing was previously conducted on the swabs, conduct acid phosphatase testing on the corresponding swabs and record and report results. It may be necessary to analyze other samples submitted in the case to determine if the swabs were mislabeled.

6.3 If appropriate, forward evidence to another section for analysis. Consult with other section examiners during analysis, as necessary.

6.4 Return evidence to the primary examiner or to security for final disposition.

♦END